

# EUROPEAN PATENT OFFICE

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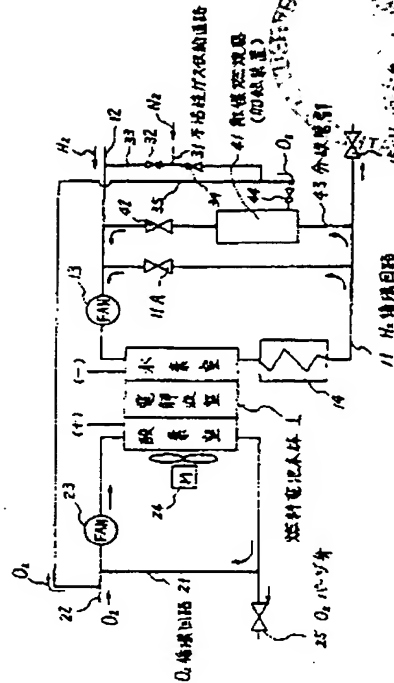
APPLICATION DATE : 10-11-87  
APPLICATION NUMBER : 62283835

APPLICANT : FUJI ELECTRIC CO LTD;

INVENTOR : WATANABE SHUNJI;

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TITLE : ALKALINE ELECTROLYTE FUEL CELL SYSTEM



ABSTRACT : PURPOSE: To quickly preheat a fuel cell main body by burning purge  $H_2$  and purge  $O_2$  produced when  $N_2$  is replaced by reaction gas in a catalyst combustor, and by circulating the reaction gas containing heated  $N_2$  to each unit cell.

CONSTITUTION:  $H_2$  or purge  $H_2$  supplied to a  $H_2$  circulation circuit 11 is used as a fuel gas, and  $O_2$  or purge  $O_2$  supplied to an  $O_2$  circulation circuit 21 is used as an oxidizing agent gas. A heating device including a catalyst combustor 44 is connected to the  $H_2$  circulation circuit 11 or the  $O_2$  circulation circuit 21 and an inert gas supply passage 31 through a valve. A fuel cell main body 1 is preheated to a specified temperature necessary for power generation. By utilizing the time required to replace  $N_2$  with reaction gas and reaction gas which is usually exhausted because of containing  $N_2$ , the fuel cell main body whose temperature is  $15^\circ C$  or lower is preheated to a temperature of several tens degrees centigrade necessary for power generation without specific preheating time and a specific energy source.

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